REMARKS

Claims 1-25 were pending in the above-identified application when last examined and are amended as indicated above.

Claims 12, 13, and 19-21 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Pat. No. 6,484,137 (Taniguchi). Applicant respectfully traverses the rejection.

Independent claim 12 distinguishes over Taniguchi at least by reciting, "each audio channel includes a plurality of audio frames and has a corresponding time scale factor that differs from the time scale factor corresponding to another of the audio channels; and each audio frame has a frame index that uniquely distinguishes the audio frame from other audio frames in the same audio channel and identifies the audio frame as corresponding to specific audio frames in other audio channels."

Taniguchi is directed to an audio reproduction system capable of decoding and expanding/compressing audio data such as found in MPEG audio subbands. Fig. 1 of Taniguchi shows an embodiment of the audio reproduction system that includes a data expanding/compressing means 103 for time scaling of audio data. Figs. 3(a)-3(c) of Taniguchi illustrate normal, compressed, and expanded frames that data expanding compressing means 103 can generate using cross fading. Taniguchi beginning at column 12, line 25 describes, "In the case of a frame to be output "through" without cross fading process, a frame signal in FIG. 3(a) is directly output from the data expanding/compressing means 103 to the synthesizing filterbank means 104. Shown in FIG. 3(b) is an example of a frame which has been subjected to time-scale compression in the compression ratio (=1/speed rate) of 1/2. Shown in FIG. 3(c) is an example of a frame which has been subjected to time-scale expansion in the expansion ratio of 3/2." Figs. 4(a)-4(f) of Taniguchi illustrate decoding processes to produce other time scales. In particular, Taniguchi describes switching the expanding/compressing means 103 between a through mode "a", a compression mode "b", and an expansion mode "c" for different frames to achieve average speed rates 1.5, 1.2, 1.1, 0.9, 0.8, and 0.7.

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Taniguchi fails to disclose a data structure having audio channels corresponding to different time scales. Instead, Taniguchi generates time scaled audio data when decoding the data. For example, within column 14, lines7-67, which the Examiner cited in the rejection of claim 12, Taniguchi describes an 11-count process during which data expanding/compressing

means 103 switches between a through mode/sequence "a" and compression mode/sequence "b" to achieve an overall time scale of 1.1. In particular, Taniguchi beginning at column 14, line 21 states:

> When the count value "1" is input, the data expansion/compression control means 107 reads a first sequence "a" of the frame sequence from the frame sequence table 108, and outputs a control signal for instructing the data expanding/compressing means 103 to perform "through" process. ... When the frame counting means 106 outputs the count value "3" or "9", the data expansion/compression control means 107 reads a frame sequence "b" from the table 108, and outputs a control signal for instructing the data expanding/compressing means 103 to perform "compression" process. ... Respective frames are thus subjected to "through", or "time-scale compression" process.

In accordance with an aspect of the present invention, each audio channel in a data structure can correspond to a different time scale factor but include audio frames that are indexed the same as audio frames in other channels. With this configuration, a player can access a channel that provides the desired time scaling, so the player does not need to consume processing power to perform time scaling. Further, by providing frames with matching indexes, the player can change the time scale simply by accessing the next frame from a different channel. Taniguchi fails to suggest a data structure with different audio channels for different time scales or matching the frame indices in such channels.

Claim 12 is thus patentable over Taniguchi.

Claim 13 depends from claim 12 and is patentable over Taniguchi for at least the same reasons that claim 12 is patentable over Taniguchi.

Independent claim 19 distinguishes over Taniguchi at least by reciting, "loading a first audio frame from a source into a player via a network, ... wherein the first audio frame has a first channel index value that identifies the first audio frame as being scaled by the first time scaling factor; playing the first audio frame ... requesting from the source a second audio frame that has a second channel index value that identifies the second audio frame as being scaled by the second time-scaling factor." As noted above, Taniguchi discloses a system that receives encoded data such as MPEG audio data and performs time scaling on the audio data. Taniguchi fails to disclose or suggest requesting frames having different time scales from a source that uses channel index values to identify time scales. Accordingly, claim 19 is patentable over Taniguchi.

Claims 20 and 21 depend from claim 19 and are patentable over Taniguchi for at least the same reasons that claim 19 is patentable over Taniguchi.

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For the above reasons, Applicant requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 102.

Claims 1-5, 9-11, 14-18, 24, and 25 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Pat. No. 6,622,171 (Gupta). Claim 2, 15, 16, 24, and 25 are canceled. Applicant respectfully traverses the rejection 1, 3-5, 9-11, 14, 17, and 18.

Independent claim 1 distinguishes over Gupta at least by reciting, "a first audio channel representing an audio portion of the presentation after time scaling by a first time scale factor, wherein the first audio channel comprises a plurality of frames; and a second audio channel representing the audio portion after time scaling by a second time scale factor that differs from the first time scale factor, wherein the second audio channel comprises a plurality of frames that are in one-to-one correspondence with the plurality of frames in the first audio channel, and corresponding frames in the first and second audio channels represent the same time interval of the presentation."

Gupta is generally directed to multimedia timeline modification in networked client/server systems. Fig. 8 of Gupta illustrates a system in which a server 300 stores multiple media streams 301 corresponding to specific multimedia content 302 but having timelines that have been modified by different factors. In regard to changing time scales in the system of Fig. 8, Gupta beginning at column 11, line 54 describes, "When the user changes the playback speed, the client requests a new media stream that most closely corresponds to the requested speed. Playback is resumed in the new stream at the same point (relative to the subject content) at which it was discontinued in the old stream. ... When the streams are linearly altered, ... the point in the new timeline equals oldtime(oldfactor/newfactor), where oldtime is the presentation time in the first media stream at which the speed change is to occur, oldfactor is the playback speed or factor of the old media stream, and newfactor is the playback speed or factor of the new media stream." Accordingly, Gupta describes a system that must calculate a point in a time and find that point in a new data stream when the time scale is changed. Gupta fails to suggest having channels with different time scale factors but corresponding frames.

With a system such as illustrated in Fig. 8 of Gupta, significant processing may be required to identify matching times in two different data streams particularly if the data streams are non-linearly compressed. In accordance with an aspect of the current invention, using matching frames in channels corresponding to different time scale factors simplifies

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switching from one time scale to another without skipping or replaying presentation content. The next frame from a different channel can be quickly identified and played.

In regard to now canceled claim 2, the Examiner indicated that processing an audio signal frame by frame is known in the art. However, claim 1 recites, "the second audio channel comprises a plurality of frames that are in one-to-one correspondence with the plurality of frames in the first audio channel, corresponding frames in the first and second audio channels representing the same time interval of the presentation." Gupta fails to disclose or suggest that frames in data streams corresponding to different time scales represent the same time interval.

For the above reasons, claim 1 and claims 3-5 and 9-11, which depend from claim 1, are patentable over Gupta.

Independent claim 14 distinguishes over Gupta at least by reciting, "performing a plurality of time scaling processes on the audio data to generate a plurality of time-scaled audio data sets, each time-scaled audio data set having a different time scale factor; partitioning each time-scaled audio data set into a plurality of frames, wherein all frames resulting from the partitioning correspond to the same amount of time in the audio data; separately compressing each frame to produce compressed frames; and collecting the compressed frames into a plurality of audio channels that form a data structure, each audio channel having a corresponding one of the different time scale factors." For the reasons noted above, Gupta fails to disclose or suggest partitioning time scaled data sets having different time scale factors into frames of the same duration in the presentation. Accordingly, claim 14 is patentable over Gupta.

Claims 17 and 18 depend from claim 14 and are patentable over Gupta for at least the same reasons that claim 14 is patentable over Gupta.

For the above reasons, Applicant requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 102.

Claims 6-8 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gupta in view of Taniguchi. Applicant respectfully traverses the rejection.

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Claims 6-8 depend directly or indirectly from claim 1. Claim 1 distinguishes over the combination of Gupta and Taniguchi by reciting, "a first audio channel representing an audio portion of the presentation after time scaling by a first time scale factor, wherein the first audio channel comprises a plurality of frames; and a second audio channel representing the

audio portion after time scaling by a second time scale factor that differs from the first time scale factor, wherein the second audio channel comprises a plurality of frames that are in one-to-one correspondence with the plurality of frames in the first audio channel, and corresponding frames in the first and second audio channels represent the same time interval of the presentation."

In regard to audio frames, Gupta and Taniguchi mention or describe overlap add methods such as cross fading or SOLA, which overlap and combine segments of audio to produce time scaled audio. However, the combination of Gupta and Taniguchi fails to disclose structuring audio channels that correspond to different time scales to have frames that are in one-to-one correspondence so that corresponding frames represent the same time interval. In particular, cross fading or SOLA when compressing or expanding audio generally combine segments of audio to either reduce or increase the amount of data/segments. Accordingly, the combination of Gupta and Taniguchi fails to suggest differently time-scaled audio channels having data frames in one-to-one correspondence, and claim 1 is patentable over the combination of Gupta and Taniguchi.

Claims 6-8 depend from claim 1 and are patentable over the combination of Gupta and Taniguchi for at least the same reasons that claim 1 is patentable over the combination of Gupta and Taniguchi.

For the above reasons, Applicant requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

In summary, claims 1-25 were pending in the application. This response cancels claims 2, 15, 16, 24, and 25 and amends claims 1, 3-6, 8, 12-14, 17, 19, and 23. For the above reasons, Applicant respectfully requests allowance of the application including claims 1, 3-14, and 17-23. Please contact the undersigned attorney at (408) 927-6700 if there are any questions concerning the application or this document.

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